TABLES

Table 1
Field Criteria

Parameter	Method	Criteria[a]		Target Reporting Limit	Laboratory PQL	Units
		Acute	Chronic			
Field Parameters						
Turbidity	Field Probe	BG+10%[g], BG+5 NTU		1	--	NTU
DO	Field Probe	>6.0 mg/L[h]		0.1	--	mg/L
Temperature	Field Probe	<16 °C[i]		0.1	--	°C
pH (Hydrogen ion concentration)	Field Probe	Between 7 - 8.5 pH Units[j]		0.2	--	pH Units
Chemical of Concern Analytes and Criteria						
Metals [b]						
Cadmium	6020A/200.8	40[k]	8.8[l]	0.10	0.10	µg/L
Chromium[c]	6020A/200.8	1,100[k]	50[l]	0.50	0.50	µg/L
Copper	6020A/200.8	4.8[k]	3.1[l]	0.5	0.5	µg/L
Lead	6020A/200.8	210[k]	8.1[l]	0.1	0.1	µg/L
Mercury	7470A	1.8[k]	0.94[l]	0.1	0.1	µg/L
Silver	6020A/200.8	1.9[l]	1.9[f,l]	0.2	0.2	µg/L
Zinc	6020A/200.8	90[k]	81[l]	4.0	4.0	µg/L
PCBs						
Total PCB Aroclors[d]	8082B	10[e,m]	0.03[m]	0.01	0.01	µg/L

Notes:
BG = Background
DO = dissolved oxygen
µg/L = micrograms per liter
mg/L = milligrams per liter
NTU = nephelometric turbidity units
PCBs = polychlorinated biphenyls
PQL = Practical Quantitation Limit
National Recommended Water Quality: Aquatic Life Criteria,
[a] http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm

[b] Acute and chronic criteria for metals (except mercury) are based on the dissolved fraction. The chronic criterion for mercury is based on total recoverable and the acute criterion is based on the dissolved fraction.

[c] Acute and chronic criteria for chromium is for the hexavalent form. Hexavalent chromium is not one of the chemicals of concern at the Jorgensen Forge site; therefore, chromium will be reported.

[d] Criteria for total PCBs based on the total recoverable fraction (EPA 2002)

[e] There is no National Recommended Water Quality Aquatic Life Acute Criterion for PCBs. The Washington State Acute Marine criterion for PCBs (Washington Administrative Code [WAC] 173-201A-240) is used.

[f] There is no chronic criterion for silver; the acute criterion of 1 .9 µg/L will be used as the chronic criterion/reporting limit.

[g] When background is above 50 NTU.

[h] When a water body's DO is lower than the criteria in Table 210 (1)(d) (or within 0.2 mg/L of the criteria) and that condition is due to natural conditions, then human actions considered cumulatively may not cause the DO of that water body to decrease more than 0.2 mg/L.

[i] When a water body's natural temperature is warmer than the criterion (or within 0.3°C [0.54°F] of the criterion), then human actions may not cause the 7-day average of daily maximum temperatures to increase more than 0.3°C (0.54°F). When the natural condition of the water is cooler than the criterion, the temperature increases must not, at any time, exceed 12/(T-2) as measured at the edge of a mixing zone boundary (where *T* represents the background temperature as measured at a point or points unaffected by the discharge and representative of the highest ambient water temperature in the vicinity of the discharge). Additionally, when the natural temperature of the water is cooler than the criterion, incremental temperature increases resulting from the combined effect of all non-point source activities in the water body must not, at any time, exceed 2.8°C (5.04°F).

[j] Any human-caused variation within the range listed above in the table must be less than 0.5 units.

[k] 1-hour average concentration.

[l] 4-day average concentration.

[m] 24-hour average concentration.

Table 2
Monitoring Schedule

Activity	In-Water Removal Activities			Backfill	Dredge Return Water
	Tier I	Tier II	Relatively Elevated Total PCB Concentration Areas[b]	Tier III	
Field Parameter Frequency	Daily for first 4 days; 2 times/day (ebb and flood tide)	3 times/week timed to relatively elevated areas; 2 times/day (ebb and flood tide)	Same as Tier I	One day during project; 2 times/day (ebb and flood tide)	Dredge return water will be returned to the "construction work area" after treatment and will be monitored concurrently with in-water removal activity monitoring.
Field Parameters and Depths	In situ conventional parameters (e.g., turbidity, DO, temperature, and pH) taken at 150-foot compliance, early warning and background monitoring station at 2 depths (top and bottom). Turbidity will also be measured at 300-foot compliance boundary to support chemistry analysis.	Same as Tier I	Same as Tier I	Same as in-water removal	
Station Location	- 75-foot early warning, 150- and 300-foot compliance station. - Background station located 600 feet upstream of Removal Action Boundary.	Same as Tier I	Same as Tier I	Same as in-water removal	
Field Parameter Monitoring Locations	- 75-foot early warning and 150-foot compliance station oriented downstream (depending on tide direction).	Same as Tier I	Same as Tier I	Same as in-water removal	
Chemical Monitoring Parameters and Locations	- COCs (PCBs and metals) collected at 150 and 300-foot compliance stations (upstream and downstream) and background station. - Analyze depth with highest turbidity at background and downcurrent compliance stations. - Archive all other samples for potential future analysis if exceedance observed.	Same as Tier I	Same as Tier I	No chemical monitoring required.	
Chemical Monitoring Frequency	- COC analysis 2 days/week; 1 time/day at depth with highest turbidity	Same as Tier I	Same as Tier I	N/A	
Water Quality Chemical Criteria	- Acute and chronic criteria (PCBs and metals). See Table 1.[a] - Chronic compliance assessed at 300-foot compliance boundary. - Acute compliance assessed at 150-foot compliance boundary.	Same as Tier I	Same as Tier I	N/A	
Water Quality Field Parameter Criteria	- Compliance assessed at 150-foot compliance boundary. - Class A (Excellent) marine waters; BG + 5 NTU, or 10% over BG when >50 NTU, DO > 6.0 mg/L at compliance, temperature < 16°C, pH between 7 - 8.5. See Table 1 for additional notes related to criteria.	Same as Tier I	Same as Tier I	Same as in-water removal	
Water Quality Field Parameter Exceedance Action	- Immediate collection and analysis of chemistry samples at 150 and 300 feet from the construction work area at exceedance depth. - Field parameter monitoring every 2 hours for remainder of day or until compliance documented.	Same as Tier I	Same as Tier I	Field parameter monitoring every 2 hours for remainder of day or until compliance documented.	
Water Quality Chemistry Exceedance Action	- Consult EPA and Ecology for appropriate action. - Analyze archived samples. - Determine if 1-hour (acute) or 24-hour (chronic) average concentrations exceed criteria.	Same as Tier I	Same as Tier I	N/A	

Notes:

[a] See Table 1 for chemical criteria.

[b] See Figure 4 for Relatively Elevated Total PCB Concentration Area.

µg/L = microgram per liter
BG = background
COC = chemical of concern
DO = dissolved oxygen
Ecology = Washington State Department of Ecology
EPA = U.S. Environmental Protection Agency
mg/L = milligram per liter
NTU = Nephelometric Turbidity Unit
PCB = polychlorinated biphenyl